embodiments, the mechanical force is applied by ultrasonics, megasonics, electrostatics, or magnetics means.

In some embodiments, the method comprises harvesting or collecting the particles. In some embodiments, the harvesting or collecting of the particles comprises a process selected from the group consisting of scraping with a doctor blade, a brushing process, a dissolution process, an ultrasound process, a megasonics process, an electrostatic process, and a magnetic process.

In some embodiments, the presently disclosed subject matter describes a particle or plurality of particles formed by the methods described herein. In some embodiments, the plurality of particles comprises a plurality of monodisperse particles. In some embodiments, the particle or plurality of particles is selected from the group consisting of a semiconductor device, a crystal, a drug delivery vector, a gene delivery vector, a disease detecting device, a disease locating device, a photovoltaic device, a porogen, a cosmetic, an electret, an additive, a catalyst, a sensor, a detoxifying agent, an abrasive, such as a CMP, a micro-electro-mechanical system (MEMS), a cellular scaffold, a taggant, a pharmaceutical agent, and a biomarker. In some embodiments, the particle or plurality of particles comprise a freestanding structure.

Further, in some embodiments, the presently disclosed subject matter describes a method of fabricating isolated liquid objects, the method comprising (a) contacting a liquid material with the surface of a first low surface energy material; (b) contacting the surface of a second low surface energy material with the liquid, wherein at least one of the surfaces of either the first or second low surface energy material is patterned; (c) sealing the surfaces of the first and the second low surface energy materials together; and (d) separating the two low surface energy materials to produce a replica pattern comprising liquid droplets.

In some embodiments, the liquid material comprises poly(ethylene glycol)-diacrylate. In some embodiments, the low surface energy material comprises perfluoropolyether-diacrylate. In some embodiments, a chemical process is used to seal the surfaces of the first and the second low surface

50. The plurality of particles of Claim 49, wherein the plurality of particles comprises a plurality of monodisperse particles.

51. The particle or plurality of particles of Claim 49, wherein the particle or plurality of particles is selected from the group consisting of a semiconductor device, a crystal, a drug delivery vector, a gene delivery vector, a disease detecting device, a disease locating device, a photovoltaic device, a solar cell device, a porogen, a cosmetic, an electret, an additive, a catalyst, a sensor, a detoxifying agent, an abrasive, a micro-electro-mechanical system (MEMS), a cellular scaffold, a taggant, a pharmaceutical agent, and a biomarker.

52. The particle or plurality of particles of Claim 49, wherein the particle or plurality of particles comprise a freestanding structure.

53. The method of Claim 1, comprising forming a multi-dimensional structure, the method comprising:

(a) providing a particle of Claim 49;

(b) providing a second patterned template;

(c) disposing a second liquid material in the second patterned template;

(d) contacting the second patterned template with the particle of step (a); and

(e) treating the second liquid material to form a multi-dimensional structure.

54. The method of Claim 1, comprising forming an interconnected structure.

55. The method of Claim 54, wherein the interconnected structure comprises a plurality of shape and size specific holes.

56. The method of Claim 55, wherein the interconnected structure comprises a membrane.

57. A method for delivering a therapeutic agent to a target, the method comprising:

(a) providing a particle of Claim 49;

(b) admixing the therapeutic agent with the particle; and